Commentary: The AVIATOR Registry: The right way to change perspective

Michele Di Mauro, MD, PhD,^a Giuseppe M. Raffa, MD,^b Massimiliano Foschi, MD,^a and Antonio M. Calafiore, MD^c

From the ^aHeart Department, SS Annunziata Hospital, Chieti; ^bDepartment for Treatment and Study of Cardiothoracic Diseases and Cardiothoracic Transplantation IRCCS—ISMETT, Palermo; and ^cCardiac Surgery Department, Pope John Paul II Foundation, Campobasso, Italy.

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Address for reprints: Michele Di Mauro, MD, PhD, Heart Department, SS Annunziata Hospital, Via dei Vestini, 66100, Chieti, Italy (E-mail: mdimauro1973@gmail.com).

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Aortic regurgitation (AR) ranges from 2% to 30% in United States, but severe AR, which is the real target of surgery, is estimated between 5% and 10%.¹ Data from Euro Heart Survey confirm this prevalence even in Europe, showing as roughly 10% of patients with valvular heart disease have moderate or more AR. However, the vast majority of patients with severe AR undergoing surgery receive aortic valve (AV) replacement, with only about 2% of cases submitted to AV repair.²

This attitude is completely opposite that adopted by cardiac surgeons in relation to mitral and tricuspid regurgitation. Even if it is indeed well-known that AV repair techniques are more technically demanding, the results of AV repair, in selected patients, are so good that they have to persuade the surgeons to perform more AV repair.

In type I³ AR, the main mechanisms underlying the central incomplete cusps coaptation are the enlargement annulus and sinotubular junction; in this case, the 2 possible approaches, remodeling and reimplantation techniques, showed both an outstanding outcome, with freedom from reoperation of 96% at 20 years (reimplantation)⁴ and even 99% at 7 years (remodeling with external ring annuloplasty).⁵ Even if in type II AR, AV replacement is still the gold standard, some dedicated experiences showed good outcome (freedom from reoperation 97.4% at 7 years) adding annuloplasty to valvuloplasty.⁶

Patients with tricuspid or bicuspid dystrophic AR, accounting for approximately two-thirds of cases, especially in the Western countries, are usually good candidates for AV repair; however, the European Association for Cardiothoracic Surgery and the European Society of Cardiology recommend to adopt a dedicated “Heart Team” to selected patients in whom AV repair may be a feasible alternative to valve replacement (Class IC indication).⁷

The AVIATOR Registry⁸ (supported by the Heart Valve Society) is an open registry with 2 aims: (1) to provide an epidemiologic picture of patients with AR and (2) to

Michele Di Mauro, MD, PhD (MDM), Massimiliano Foschi, MD (MF), Giuseppe M. Raffa, MD (GMR), Antonio M. Calafiore, MD (AMC)

Central Message

The AVIATOR Registry is an open registry providing the results of a large cohort of patients who will benefit from AV repair rather than replacement. This approach changes the perspective of AV surgery for AR, providing new insights when AV repair represents the best of care.

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analyze large homogeneous cohorts of patients who will benefit from AV repair rather than replacement either in case of isolated or combined AR with aortic aneurysm.

This approach changes the perspective of AV surgery for AR, and finally surgeons can have some new insights from a large cohort of patients with AR in whom AV repair represents the best of care to use this information as a clinical tool in their daily practice. Moreover, this registry could reveal to us how much the success and the durability of AV repair are either valve degeneration severity or dependent on the surgeon's skill.

The main weakness of the AVIATOR is that the prevalence of AV replacement is too small to realize any comparison, which is enlightening, as most the participating centers are more devoted to AV repair than AV replacement, and this could be a great bias. Nevertheless, the AVIATOR registry represents the first international attempt to change perspective in the approach to AV repair.

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